



Page 1

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Set	Items	Description
S1	814827	(LIQ? ? OR LIQUID) (2N) WASTE? ? OR WASTEWATER OR WASTE (N) WATER
S2	10526302	TREAT?
S3	4442570	RECOVER? OR RECLAMAT? OR RECLAIM? OR RETRIEV? OR SALVAG? OR REGENERAT? OR RECONDITION? OR REFORM? OR RECONSTIT? OR REUSE? ? OR REUSING? ? OR RECYCL? OR REPROCESS?
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S6	3009971	DIFFUS? OR SPRAY? OR SPRITZ? OR SQUIRT?
S7	599199	S1 AND S2
S8	466	S7 AND S5
S9	162	S1 (2N) S5
S10	487204	S1 (3N) S2
S11	70	S9 AND S10
S12	1107209	FLAME? ? OR BLAZE? ? OR FLARE? ? OR FIRE? ?
S13	8	S11 AND S12
S14	212	S1 (4N) S5
S15	124	S14 AND S2
S16	13	S15 AND S12
S17	13	S16 OR S13
S18	4890	S1 (6N) S6
S19	3447	S18 AND S2
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S22	41	S17 OR S21

S23 38 RD S22 (unique items)

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23/7,DE/1 (Item 1 from file: 6)

DIALOG(R)File 6:NTIS

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0752382 NTIS Accession Number: PB-292 343/1/XAB

Responses of Several Forage and Field Crops to Subsurface Soil Warming and Sewage Effluent Spray Irrigation

(Master's thesis)

Mellish, G. A.

Pennsylvania State Univ., University Park. Dept. of Agronomy.

Sponsor: Office of Water Research and Technology, Washington, DC.

Report No.: W79-04489; OWRT-C-6249(5222) (3)

Aug 78 169p

Languages: English Document Type: Thesis

Journal Announcement: GRAI7912

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Contract No.: DI-14-31-0001-5222; OWRT-C-6249(5222)

The influence of soil warming and sewage waste water irrigation on winter survival, maturation, yield, quality, and pest relationships of various crops was evaluated. An electric power plant-soil warming system was simulated by circulating hot water from an oil-***fired*** boiler through a pipe network buried at a 30-cm depth and 60-cm spacing. Treatments consisted of soil temperature regimes which were approximately 13 and 9C above average annual ambient soil temperatures at the 15-cm depth and an ambient soil control. Treatment areas were ***spray***-irrigated with ***treated*** sewage ***waste*** ***water*** twice weekly. Four cropping systems were used. Soil warming delayed the development of autumn cold tolerance in alfalfa, winter wheat, and winter barley and reduced cold tolerance attained by the winter cereal crops. Soil warming stimulated early spring growth and increased the rate of maturation of most crops. Yield responses to soil warming varied with the type of crop. Annual and perennial crops could be grown on heated and waste water irrigated soil in the Northeast and double cropping would be more feasible than with a conventional agricultural system.

Descriptors: *Soils; *Heating; *Irrigation; *Farm crops; Sewage treatment

; Forage grasses; Survival; Yield; Quality; Maturation; Plant growth; Seasonal variations; Electric power plants; Temperature; Pipes(Tubes); Cold tolerance; Grain crops; Evaluation; Feasibility

23/7,DE/2 (Item 1 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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03558281

E.I. Monthly No: EIM9302-006710

Title: Method for increased wastewater reuse/recycle at a coal ***fired*** electric power station.

Author: Wethern, Michael J.; Stone, Dennis H.; Whipple, Sharon S.

Corporate Source: Mitco Water Lab, Winter Haven, FL, USA

Conference Title: 4th International Power Generation Exhibition and Conference Part 3 and 4

Conference Location: Tampa, FL, USA Conference Date: 19911204

E.I. Conference No.: 16619

Source: International Exhibition & Conference for the Power Generation Industries - Power-Gen v 3-4. Publ by Power-Gen, Houston, TX, USA. p 521-530

Publication Year: 1991

CODEN: 85LAAI

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications)

Journal Announcement: 9302

Abstract: Reverse osmosis (RO) is a major element of a comprehensive wastewater management system at Tampa Electric's Francis J. Gannon Power Station. The RO ***treated*** ***wastewater*** is suitable for demineralizer make-up in which high quality RO permeate mixed with city water results in an increase in time periods between resin regeneration. Tampa Electric Company has initiated an innovative water management program for the purpose of reducing the quantity of ***wastewater*** disposed in a permitted ***sprayfield***, to increase the reuse of ***treated*** ***wastewater*** and reusing city water consumption. This paper will review Tampa Electric's decision making process, discuss the importance of the background information collected prior to design, review data from the first year of operation and emphasize the unique characteristics of this application. 7 Refs.

Descriptors: ****WASTEWATE****R ***TREATMENT***; ELECTRIC POWER PLANTS; REVERSE OSMOSIS; COAL ***FIRED*** BOILERS

23/7,DE/3 (Item 2 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)
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03558278

E.I. Monthly No: EIM9302-006707

Title: Ten years of 'real life' operational experience of a zero discharge power plant in Florida.

Author: Brew, Chris; Blackwell, Chuck

Corporate Source: Gainesville Regional Utilities, Gainesville, FL, USA

Conference Title: 4th International Power Generation Exhibition and Conference Part 3 and 4

Conference Location: Tampa, FL, USA Conference Date: 19911204

E.I. Conference No.: 16619

Source: International Exhibition & Conference for the Power Generation Industries - Power-Gen v 3-4. Publ by Power-Gen, Houston, TX, USA. p. 479-488

Publication Year: 1991

CODEN: 85LAAI

Language: English

Document Type: PA; (Conference Paper) Treatment: E; (Economic/Cost Data/Market Survey)

Journal Announcement: 9302

Abstract: This paper describes some of the experiences gained from operating a zero discharge system for a coal ***fired*** power plant in north central Florida over the last ten years. The Deerhaven Generating Station is located in an area that receives approximately 52 inches of rain per year while the average annual lake evaporation is only 45 inches, resulting in a net precipitation site. Consequently, the plant was designed to minimize fresh water use and recycle as much of the wastewater as possible. All water brought on site eventually evaporates via cooling towers or the brine concentrator system. The solid wastes formed in the ***wastewater*** ***treatment*** system are landfilled on site. The heart of the zero discharge system at Deerhaven is the Process Plant. Located here are the Front End System - a cold lime/soda ash water softening system for cooling tower makeup water; and, the Process Water Treatment System - a vapor recompression evaporator (brine concentrator) and ***spray*** dryer for ***wastewater*** reduction. This paper reviews the zero discharge system and gives some of its operational and maintenance history. Flow rates, water chemistry, and cost data are also presented. Hopefully, those who are now in the process of designing and building a zero discharge system can learn from our experience of operating such a system at the Deerhaven Generating System for the past ten years. (Author abstract)

Descriptors: *COAL ***FIRED*** BOILERS; POWER PLANTS; WATER TREATMENT

23/7,DE/4 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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02666774

E.I. Monthly No: EI8811103917
Title: WASTE WATER COMBUSTION IN LABORATORY SWIRL BURNERS-I. ARRANGEMENTS AND BURNING CONDITIONS.
Author: Zell, U.; Shamekhi, R.; Roth, P.
Corporate Source: Univ Duisburg, Duisburg, West Ger
Source: Chemical Engineering Science v 43 n 7 1988 p 1657-1666
Publication Year: 1988
CODEN: CESCAC ISSN: 0009-2509
Language: English
Document Type: JA; (Journal Article) Treatment: T; (Theoretical); X; (Experimental)
Journal Announcement: 8811
Abstract: We report on laboratory experiments of waste water combustion with dissolved N- and S-compounds sprayed into a confined swirl ***flame***. The aims are to measure the NO formation under various operating conditions and to study the interaction of NO and SO₂ formation in ***flames*** with water injection. The experimental equipment, the sampling systems, and the diagnostics are described. Two types of burners, which mainly differ in the method of ***waste*** ***water*** injection, were used. The ***spray*** characteristics of the nozzles and the droplet evaporation process could be measured. The temperature and the axial flow velocity distribution together with CO and unburned hydrocarbon concentration measurement characterizes the global flow and combustion process. Thermal NO concentrations measured in the two types of burners under pure water injection conditions serve as a reference level for the subsequent N-doped water results. (Edited author abstract). 16 Refs.
Descriptors: *CHEMICAL PLANTS--*Effluent ***Treatment***;
WASTEWATER-Combustion; NITROGEN OXIDES; SULFUR DIOXIDE

23/7,DE/5 (Item 4 from file: 8)
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00923353

E.I. Monthly No: EI8006044905
E.I. Yearly No: EI80037296
Title: ***Sprayerless*** ***Fire*** ***Treatment*** of ***Liquid*** Fuel ***Wastes*** with Solid Inclusions.
Title: BESFORSUNOCHNOE OGNEVOE OBEZVREZHIVANIE GORYUCHIKH ZHIDKIKH

OTKHODOV S TVERDYMI VKLYUCHENIYAMI.

Author: Gudzyuk, V. L.; Bakhirev, V. I.; Shelygin, B. L.; Balod, B. A.

Source: Khimicheskaya Promyshlennost n 10 1979 p 622-624

Publication Year: 1979

CODEN: KPRMAW ISSN: 0023-110X

Language: RUSSIAN

Journal Announcement: 8006

Abstract: The possibility of stable operation of bubble type burners during sprayerless combustion of liquid fuels containing coarsely dispersed (up to 500 MU m) solid inclusions is considered. The results of a study of the process of stabilization of the solid-phase particle concentration in the bubbling bed are presented. It is shown that a change in the regime parameters such as the bubbling rate the degree of dispersion of the solid phase, and the concentration of mechanical impurities in the liquid waste entering the reactor leads to a change in the hydrodynamic situation in the system and, consequently, to a change in the particle concentration in the bubbling bed during stable operation of the reactor. 6 refs. In Russian.

Descriptors: *FUELS--*Wastes; SUSPENSIONS--Combustion; WATER POLLUTION--Control

23/7,DE/6 (Item 5 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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00406167

E.I. Monthly No: EI7411074416

Title: INCINERATION OF LIQUID WASTES.

Author: Sim, S. W.

Corporate Source: Henry Balfour & Co

Source: Chemical Processing v 20 n 5 May 1974 p 32-34

Publication Year: 1974

CODEN: CPROAI

Language: ENGLISH

Journal Announcement: 7411

Abstract: A process description is given for the NICE process for waste incineration and salt recovery. Waste liquid is pumped to multiple two fluid atomizing jets located in the shoulder of the incinerator. The atomizing fluid can be either steam or compressed air depending on the exact nature of the waste liquid. Natural gas, fuel oil or distillation residues are ***fired*** vertically downwards in a high energy release burner. This burner is used to maintain optimum operating temperatures in the incinerator which can be in the range of 800 C to 1100 C depending on ***waste*** ***liquid*** composition. The two fluid ***atomizing*** jets produce a fine mist of droplets which rapidly dry. The organic compounds

are thermally cracked in the high temperature environment and oxidize to carbon dioxide water. The inorganic salts are decomposed to oxides, carbonates, sulfates or other salts depending on the make up of the original waste liquid. The combustion gas and inorganic salts pass through the incinerator into a water irrigated downcomer and then into the quench vessel where the combustion gases are cooled to approximately 90 C. The basic incineration and quench system can be integrated into a number of schemes. A list of various types of plants in which this process can be used and process economics are provided.

Descriptors: *WASTE DISPOSAL--*Incineration; WATER ***TREATMENT***--Salt Removal; WATER POLLUTION--Control; WATER ***TREATMENT***, INDUSTRIAL

23/7,DE/7 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus
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02543125 JICST ACCESSION NUMBER: 95A0760027 FILE SEGMENT: JICST-E
Experimental Study on Development of ***Liquid*** ***Waste***
Treating System.
SHIMADA SOHEI (1); ITO KAZUITSU (2)
(1) Univ. of Tokyo, Fac. of Eng.; (2) Mitsubishi Heavy Ind., Ltd.
Shigen to Sozai(Journal of the Mining and Materials Processing Institute of Japan), 1995, VOL.111,NO.8, PAGE.549-552, FIG.12, TBL.1, REF.4
JOURNAL NUMBER: F0463ABH ISSN NO: 0916-1740
UNIVERSAL DECIMAL CLASSIFICATION: 628.544/.545
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: An evaporating and ***treating*** system of ***liquid*** ***wastes*** produced from many fields of industries by using a jet burner was proposed. In order to obtain the data showing the capacity of heat exchange of this system, the fundamental experiments were carried out. This ***treating*** system were consisted of a jet burner operated by gasoline and compressed air, an atomizer installed at the nozzle exit, a ***treating*** tank in which the liquid particles and the jet were injected and a duct for the exhaust gas. Water was used for representing the ***liquid*** ***wastes***. The ***liquid*** was ***atomized*** at first by atomizer and the atomized particles were evaporated with flowing in the jet stream. The ratio of weight of water ***treated*** and the gasoline fed into jet burner, temperature of exhausted gas and the diameter of atomizer were varied in the experiments. The volume of the tank needed to evaporate the liquids was obtained from the experiments. The coefficient of heat capacity

calculated from the obtained data was 1-8*103 (kcal/m³vhv. DEG.C.).
(author abst.)

DESCRIPTORS: ***waste*** ***water*** ***treatment***; ***flame***; burner; nozzle; high temperature; jet(flow); evaporation; temperature distribution; heat capacity; flow rate; waste ***treatment*** plant

BROADER DESCRIPTORS: sewage ***treatment***; water and sewage ***treatment***; ***treatment***; combustion equipment; equipment; temperature; fluid flow; evapotranspiration; phase transition; distribution; thermodynamic property; facility and building

23/7,DE/8 (Item 1 from file: 103)

DIALOG(R)File 103:Energy SciTec

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05152246 DOEEMSP; RN04113675; TRN US200429%%88; INS-US0404816

Title: Isolation of Metals from Liquid Wastes: Reactive in Turbulent Thermal Reactors

Author(s): Wendt, Jost O.L.

Corporate Source: University of Arizona, Tucson, AZ (US)

Sponsoring Organization: USDOE Office of Environmental Management (EM)
(US)

Source: Other Information: PBD: 30 Sep 2001 Scope: Final

Publication Date: 20010930

Availability Date: 20041122

Report Number(s): EMSP-60326

OSTI Number(s): DE00829931

Contract Number (DOE): A107-97ER14839; FG07-97ER14837; FG07-97ER14831

Contract Number (Non-DOE): R&D Project EMSP 60326; TRN US200429%%88

Language: English

Medium/Dimensions: Size: vp.; Format: Adobe PDF Document with Extractable Text

Abstract: A Generic Technology for ***treatment*** of DOE Metal-Bearing Liquid Waste The DOE metal-bearing liquid waste inventory is large and diverse, both with respect to the metals (heavy metals, transuranics, radionuclides) themselves, and the nature of the other species (anions, organics, etc.) present. Separation and concentration of metals is of interest from the standpoint of reducing the volume of waste that will require special ***treatment*** or isolation, as well as, potentially, from the standpoint of returning some materials to commerce by recycling. The variety of metal-bearing liquid waste in the DOE complex is so great that it is unlikely that any one process (or class of processes) will be suitable for all material. However, processes capable of dealing with a wide variety of wastes will have major advantages in terms of process development, capital, and

operating costs, as well as in environmental and safety permitting. Moreover, to the extent that a process operates well with a variety of metal-bearing liquid feedwastes, its performance is likely to be relatively robust with respect to the inevitable composition variations in each waste feed. One such class of processes involves high-temperature ***treatment*** of ***atomized*** ***liquid*** ***waste*** to promote reactive capture of volatile metallic species on collectible particulate substrates injected downstream of a ***flame*** zone. Compared to low-temperature processes that remove metals from the original liquid phase by extraction, precipitation, ion exchange, etc., some of the attractive features of high-temperature reactive scavenging are: The organic constituents of some metal-bearing liquid wastes (in particular, some low-level mixed wastes) must be ***treated*** thermally in order to meet the requirements of the Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA), and the laws of various states. No species need be added to an already complex liquid system. This is especially important in light of the fact that DOE has already experienced problems with organic complexants added to precipitate radionuclides. For example, the Defense Nuclear Facilities Safety Board has expressed, in a formal Recommendation to the Secretary of Energy, its concern about the evolution of benzene vapor in concentrations greater than the lower flammability limit from tanks to which sodium tetraphenylborate has been added to precipitate ^{137}Cs in the "In-Tank Precipitation" (ITP) process at the Savannah River Site. Other species added to the waste in the ITP process are sodium titanate (to adsorb ^{90}Sr and Pu), and oxalic acid. Avoiding addition of organics to radioactive waste has the additional advantage that is likely to significantly reduce the rate of radiolytic and radiolytically-induced hydrogen generation (c.f. Meisel et al., [1993]), in which it is shown that removal of organics reduces the rate of hydrogen generation in simulated waste from Hanford tank 241-SY-101 by over 70%. Organic species already present are destroyed with very high efficiency. This attribute is especially attractive with respect to high-level tank waste at the Hanford Site, in which large amounts of citrate, glyoxylate, EDTA (ethylenediaminetetraacetic acid), and HEDTA [N-(2-hydroxyethyl)-ethylenediaminetriacetic acid] were added to precipitate radionuclides. These organic species are important in the thermal and radiolytic generation of methane, hydrogen, and nitrous oxide, flammable mixtures of which are episodically vented from 25 tanks on Hanford's Flammable Gas Watch List [Hopkins, 1994]. The same basic approach can be used to ***treat*** a broad range of liquid wastes, in each case concentrating the metals (regardless of liquid-phase oxidation state or association with chelators or absorbents) using a collectible sorbent, and destroying any organic species present. In common with the Army's approach (see section 2.2)

to the thermal destruction of a 10 range of chemical warfare agents (GB, VX, and two blister agents), this may drastically simplify process and plant design and facility permitting, and reduce capital costs, by avoiding development of a separate "wet" process for each type of liquid waste source. The expected robustness of the process with respect to gross feedwaste composition suggests a relatively high degree of tolerance with respect to inevitable variations in the composition of a given metal-bearing feedwaste. For these reasons, high-temperature reactive scavenging is a potentially attractive approach to the removal of metals from liquid waste in the DOE complex.

2.2. Community Acceptability of High-Temperature Waste Processing

Descriptors: CAPITALIZED COST; CHEMICAL WARFARE AGENTS; ION EXCHANGE; LIQUID WASTES; NITROUS OXIDE; NUCLEAR FACILITIES; OPERATING COST; OXALIC ACID; RADIOACTIVE WASTES; RADIOISOTOPES; RESOURCE CONSERVATION; THERMAL REACTORS; TOXIC SUBSTANCES CONTROL ACTS; TRADE; VALENCE; WASTE PROCESSING; WASTES

23/7,DE/9 (Item 2 from file: 103)

DIALOG(R) File 103:Energy SciTec

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04187580 NEDO-97-911350; EDB-97-096284

Title: Recent technology of total flue gas treatment system for coal-
fired boiler

Original Title: Saikin no sekitandaki boiler haien shori gijutsu

Author(s): Okazoe, K. (Mitsubishi Heavy Industries, Ltd., Tokyo (Japan))

Source: Karyoku Genshiryoku Hatsuden (Thermal and Nuclear Power) v 48:1.

Coden: KGHTA8 ISSN: 0387-1029

Publication Date: 15 Jan 1997

p 18-27

Language: Japanese

Abstract: Environmental measures in power generation plants have been mainly dealt with unit facilities such as electric precipitator (EP) for dust, flue gas desulfurizer (FGD) for SO₂, gas-gas heater (GGH) and chimney for temperature rise and ***diffusion*** of gases, and ***waste*** ***water*** ***treatment*** system (WWTS) for desulfurization. This paper presents some recent combined examples of these technologies. As measures for high dust removal in coal-
fired power generation, the advanced flue gas treatment systems composed of EP, GGH and FGD are first presented such as super-low temperature EP and soot mixing desulfurizer, super-low temperature EP and GGH for high-density dust, and liquid column absorption tower for high dust removal. The non-drain closed system composed of FGD and ***waste*** ***water*** ***treatment***, and the control system of

desulfurization air rates for reducing ***waste*** ***water*** ***treatment*** loads are next described. The simple chimney built-in desulfurization technology is finally outlined which is featured by natural dewatering of gypsum slurry produced by absorptive reaction of SO₂ into lime stone. 4 refs., 15 figs., 1 tab.

Major Descriptors: *BOILERS -- COAL; *BOILERS -- FLUE GAS; *BOILERS -- FOSSIL-FUEL POWER PLANTS; *COAL -- COMBUSTION; *FLUE GAS -- AFTERBURNERS; *FLUE GAS -- AIR POLLUTION ABATEMENT; *FLUE GAS -- DESULFURIZATION; *FLUE GAS -- ELECTROSTATIC PRECIPITATORS; *FLUE GAS -- STACKS

Descriptors: CLOSED-CYCLE SYSTEMS; GYPSUM; LIMESTONE; SLURRIES; SOOT; WASTE WATER; WATER REMOVAL; WATER TREATMENT

Broader Terms: CARBONACEOUS MATERIALS; CARBONATE ROCKS; CHEMICAL REACTIONS; DISPERSIONS; ENERGY SOURCES; EQUIPMENT; FOSSIL FUELS; FUELS; GASEOUS WASTES; HYDROGEN COMPOUNDS; LIQUID WASTES; MATERIALS; MINERALS; MIXTURES; OXIDATION; OXYGEN COMPOUNDS; POLLUTION ABATEMENT; POLLUTION CONTROL EQUIPMENT; POWER PLANTS; REMOVAL; ROCKS; SEDIMENTARY ROCKS; SULFATE MINERALS; SUSPENSIONS; THERMAL POWER PLANTS; THERMOCHEMICAL PROCESSES; WASTES; WATER

23/7,DE/10 (Item 3 from file: 103)
DIALOG(R)File 103:Energy SciTec
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03837323 CLA-95-070681; EDB-95-081091

Title: Keystone cogeneration project liquid zero liquid discharge water treatment system

Author(s): Sinha, P.K.; Jolly, R.S.; Weidinger, G.F. (Bechtel Power Corporation, Gaithersburg, MD (United States))

Source: Ultrapure Water v 11:2. Coden: ULWAE5 ISSN: 0747-8291

Publication Date: 1994

p 62-66

Language: English

Abstract: The design of a feedwater and ***wastewater*** ***treatment*** system for a coal-***fired*** power plant (NJ, USA) about to start operation is described. The aim was to eliminate any discharge of ***liquid*** ***waste***, by ***spraying*** it into the flue gases as part of the desulphurization process. The wastewater included: cooling tower blow-down, coal heap run-off, demineralizer regeneration wastewater, spent bottom ash system cooling water, treated sanitary wastes, sludge dewatering system filtration, and any spillages that drain off the floor area.

Major Descriptors: *FOSSIL-FUEL POWER PLANTS -- WATER TREATMENT

Descriptors: COGENERATION; DESULFURIZATION; FLUE GAS; NEW JERSEY; OSMOSIS;

USA; WASTE WATER; WATER TREATMENT PLANTS
Broader Terms: CHEMICAL REACTIONS; DEUS; DEVELOPED COUNTRIES; DIFFUSION;
ENERGY SYSTEMS; GASEOUS WASTES; HYDROGEN COMPOUNDS; LIQUID WASTES;
NORTH AMERICA; OXYGEN COMPOUNDS; POWER GENERATION; POWER PLANTS; STEAM
GENERATION; THERMAL POWER PLANTS; USA; WASTES; WATER

23/7,DE/11 (Item 4 from file: 103)
DIALOG(R) File 103:Energy SciTec
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01734106 EDB-86-057787
Title: Utilizing sediments from biological ***waste*** ***water***
treatment for ***spraying*** spoil banks

Author(s): Bobrov, O.G.; Zaitsev, Yu.S.; Kessariiskii, Yu.V.
Source: Ugol' Ukr. (Ukrainian SSR) v 4. Coden: UGOUA

Publication Date: Apr 1985
p 30-31

Language: Russian

Abstract: Use of anaerobic sludge for prevention of spontaneous combustion of spoil banks consisting of coal and mine stones from underground coal mines and effects of sludge treatment on soil properties which influence spoil bank reclamation are discussed. Sludge from water treatment rich in organic matter (50 to 60%), nitrogen (2 to 5%), phosphorus anhydride (up to 2%), calcium oxide (up to 5%) and humus was used in the Donbass. A spoil bank consisted of sedimentary rocks (sandstones, limestones, shales, clays, mudstone) and coal (size 0 to 200 mm). Coal content ranged from 7-13%, sulfur content amounted to about 5%. Content of coal, sulfur and timber exceeded 20%. The spoil bank was treated with sludge suspension in water. Evaluations showed that the sludge treatment improved soil properties which influenced spoil bank reclamation. Humus content increased 7 to 16 times, content of nitrogen trioxide and phosphorus anhydride increased 10 to 50 times. Chemical activity of rocks forming the spoil bank declined 20 to 25%. Hazards of coal spontaneous combustion decreased. The results of investigations are shown in a table.

Major Descriptors: *SLUDGES -- WASTE PRODUCT UTILIZATION; *SPOIL BANKS -- ***FIRE*** PREVENTION; *SPOIL BANKS -- LAND RECLAMATION

Descriptors: CALCIUM OXIDES; CHEMICAL COMPOSITION; CLAYS; COAL; COAL MINES;
FIRE HAZARDS; HUMUS; LIMESTONE; MINERAL WASTES; NITROGEN OXIDES;
PHOSPHORUS COMPOUNDS; SANDSTONES; SEDIMENTS; SOILS; SPONTANEOUS
COMBUSTION; SPRAYS; THERMODYNAMIC ACTIVITY; UNDERGROUND MINING; USSR;
WASTE MANAGEMENT; WASTE WATER; WATER; WATER TREATMENT

Broader Terms: ALKALINE EARTH METAL COMPOUNDS; ASIA; CALCIUM COMPOUNDS;
CARBONACEOUS MATERIALS; CARBONATE ROCKS; CHALCOGENIDES; CHEMICAL

REACTIONS; COMBUSTION; EASTERN EUROPE; ENERGY SOURCES; EUROPE; FOSSIL FUELS; FUELS; HAZARDS; HYDROGEN COMPOUNDS; LIQUID WASTES; MANAGEMENT; MATERIALS; MINES; MINING; NITROGEN COMPOUNDS; OXIDATION; OXIDES; OXYGEN COMPOUNDS; ROCKS; SEDIMENTARY ROCKS; SOLID WASTES; THERMOCHEMICAL PROCESSES; UNDERGROUND FACILITIES; WASTES; WATER

23/7,DE/12 (Item 5 from file: 103)
DIALOG(R)File 103:Energy SciTec
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00594573 ERA-05-013519; EDB-80-034096

Author(s): Mellish, G.A.

Title: Responses of several forage and field crops to subsurface soil warming and sewage effluent spray irrigation. Master's thesis

Corporate Source: Pennsylvania State Univ., University Park (USA). Dept. of Agronomy

Publication Date: Aug 1978

p 169

Report Number(s): PB-292343

Contract Number (DOE): DI-14-31-0001-5222

Language: English

Availability: NTIS, PC A08/MF A01.

Abstract: The influence of soil warming and sewage waste water irrigation on winter survival, maturation, yield, quality, and pest relationships of various crops was evaluated. An electric power plant-soil warming system was simulated by circulating hot water from an oil-***fired*** boiler through a pipe network buried at a 30-cm depth and 60-cm spacing. Treatments consisted of soil temperature regimes which were approximately 13 and 9C above average annual ambient soil temperatures at the 15-cm depth and an ambient soil control. Treatment areas were ***spray***-irrigated with ***treated*** sewage ***waste*** ***water*** twice weekly. Four cropping systems were used. Soil warming delayed the development of autumn cold tolerance in alfalfa, winter wheat, and winter barley and reduced cold tolerance attained by the winter cereal crops. Soil warming stimulated early spring growth and increased the rate of maturation of most crops. Yield responses to soil warming varied with the type of crop. Annual and perennial crops could be grown on heated and waste water irrigated soil in the Northeast and double cropping would be more feasible than with a conventional agricultural system.;

Major Descriptors: *AGRICULTURE -- WASTE HEAT UTILIZATION; *AGRICULTURE -- WASTE PRODUCT UTILIZATION; *ALFALFA -- PRODUCTIVITY; *BARLEY -- PRODUCTIVITY; *CEREALS -- PRODUCTIVITY; *FOSSIL-FUEL POWER PLANTS -- PRODUCTIVITY; *FOSSIL-FUEL POWER PLANTS -- THERMAL EFFLUENTS; *SEWAGE

SLUDGE -- WASTE WATER; *SOILS -- HEATING; *THERMAL EFFLUENTS -- BIOLOGICAL EFFECTS; *WASTE WATER -- BIOLOGICAL EFFECTS; *WHEAT -- PRODUCTIVITY

Descriptors: CULTIVATION TECHNIQUES; DISEASE RESISTANCE; FEASIBILITY STUDIES; IRRIGATION; PLANT GROWTH; SEASONAL VARIATIONS

Broader Terms: CEREALS; GRAMINEAE; GRASS; GROWTH; HYDROGEN COMPOUNDS; INDUSTRY; LEGUMINOSAE; LIQUID WASTES; OXYGEN COMPOUNDS; PLANTS; POWER PLANTS; SEWAGE; THERMAL POWER PLANTS; VARIATIONS; WASTE PRODUCT UTILIZATION; WASTES; WATER

23/7,DE/13 (Item 1 from file: 110)

DIALOG(R)File 110:WasteInfo

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00052448

Waste disposal by incineration on large industrial sites

Clark, J.A.J.

Effluent Treatment and Disposal. Paper from 3 day Symp. on..., Bradford, UK, 15-17 Apr. 1986. Pergamon P. for Institution of Chemical Engineers, (1986). EFCE Publication Series No. 53, Institution of Chemical Engineers Symposium Series No. 96. pp. 365-372. ISBN--0-08- 032642-0

RECORD TYPE: ABSTRACT

Review presented covers essentials for efficient combustion and improved designs including using contaminated air stream as combustion air, 2-chamber low NO_x incineration, flat ***flame*** profiles and ***liquid*** ***waste*** ***atomization*** ***.Waste*** heat recovery systems and a case history are discussed

DESCRIPTORS: Gases; Liquids and effluents; Solids; Nitrogen compounds; Organics; Chemical and allied industries; Solvents; Waste disposal; ***Treatment*** methods; Plant and equipment; Incineration; Heat utilization; Engineering design; Conference; Review; Data; Costs; UK; Library book; 1986

23/7,DE/14 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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14207548 PASCAL No.: 99-0408023

Widespread failure to comply with U.S. storm water regulations for industry-part I: Publicly available data to estimate number of potentially regulated facilities

DUKE L D; COLEMAN K P; MASEK B
Environmental Science and Engineering Program, School of Public Health
University of California, Los Angeles, CA 90095-1772, United States
Journal: Environmental engineering science, 1999, 16 (4) 229-247
ISSN: 1092-8758 Availability: INIST-20625; 354000085527480010
No. of Refs.: 18 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English

Storm water discharges associated with industrial activities must be characterized for effective analysis of pollutant loads in urban watersheds. Regulatory compliance lists and inventories developed for other purposes may be poor estimators of discharging facilities. This research evaluated usefulness, flaws, and limitations of multiple forms of existing databases; then demonstrated methods to assess, combine, and correct databases to refine estimates of potentially discharging facilities in a given region. A commercial database showed few facility listings in common with inventories developed by regional agencies under municipal storm water NPDES permits or with compliance lists maintained by other regulatory agencies (**wastewater*** ***treatment*** authorities, ***fire*** departments, and others). Comparison to lists of known discharging facilities-self-identified as covered by regulations-showed none of these resources alone captured a large proportion of the facilities. A more intensive approach, tested for part of the Los Angeles region, composited six databases and identified only 75% of known facilities. Results were validated by phone and field verification for selected regions, showing correct location information for about 60% of the listings in two voluntary reporting systems (Toxics Reduction Inventory, and state Air Resources Board); about 65% of the listings in the commercial database; and over 80% for two local regulatory agencies (**fire*** department and wastewater authority). Results were combined to estimate the number of facilities potentially covered by storm water regulations, suggesting the Los Angeles County total may be 100% larger, and the California total 70% larger, than estimates using U.S. Census data.

English Descriptors: Water pollution; Runoff water; Urban area; Storm water ; Industrial ***waste*** ***water***; Legislation; United States; ***Diffuse*** source

French Descriptors: Pollution eau; Eau ruissellement; Zone urbaine; Surverse orage; Eau usee industrielle; Legislation; Etats Unis; Source diffuse

Spanish Descriptors: Contaminacion agua; Escorrentia; Zona urbana; Agua lluvia; Agua servida industrial; Legislacion; Estados Unidos; Fuente difusa

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23/7,DE/15 (Item 1 from file: 315)
DIALOG(R) File 315:ChemEng & Biotec Abs
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544172 CEABA Accession No.: 36-11-000692 DOCUMENT TYPE: Journal
Title: Removal of sulphur-nitrogen compounds from FGD ***waste***
water by ozone ***treatment***

Orig. Title: Entfernung von Schwefel-Stickstoff-Verbindungen aus
REA-Abwasser durch Ozon-Behandlung

AUTHOR: Fogh, F. ; Smitshuyzen, E.F. ; Wolff, S. ; Koivisto, M.
CORPORATE SOURCE: Elsam Engineering A/S, Skaerbaek, DK Altec GmbH,
Duesseldorf, DE Air Liquid A/S, Ballerup, DK

JOURNAL: VGB PowerTech, Volume: 85, Issue: 7, Page(s): 82-86

ISSN: 14353199

PUBLICATION DATE: 2005 (20050000)

ABSTRACT: Flue gases from power plants are mainly desulfurised using two techniques, wet scrubbing gypsum processes or spray dry adsorption. This article presents a comparative study of operations at several coal-***fired*** units operated by Elsam in Denmark over a five-year period, detailing how the inclusion of ozonisation processes has minimised the environmental release of toxic substances. Pilot plant process experience, and operating problems initially encountered such as corrosion and fouling are described, as are the strategies incorporated at scale-up to overcome them.

ABSTRACTOR: Lofthouse, J. T.

ABSTRACT: Die Fa. Elsam betreibt in Daenemark sechs Kohlekraftwerke, die mit halbtrockenen (Spruehtrocknung von Kalkmilch) und mit nassen (Kalkstein-zu Gipssuspension) Rauchgas-Entschwefelungs-Anlagen (REAs) versehen sind. Die halbtrockenen Verfahren erzeugen ein Produkt, das noch relativ viel reaktionsfaehiges Material enthaelt. Es wird seit 1999 in Elsams nassen REAs anstelle von Kalkstein eingesetzt. Dadurch koennen die halbtrockenen REAs mit hoeheren SO_(sub 2)-Abscheidegraden bei hoeherem Kalkueberschuss wirtschaftlich betrieben werden; die Abscheidegrade der nassen REAs werden erhoeht, weil Kalkhydrat reaktiver ist als Kalkstein, die Regelung der nassen REAs wird schneller/glatter, und es wird anstelle eines zu deponierenden Abfalls ein als Baustoff vermarktbarer Gips erzeugt. Das REA-Abwasser wird bei Fa. Elsam von Schwermetallen befreit und zur Abscheidung von Stickstoff-und organischen Verbindungen einer kommunalen Abwasserreinigungsanlage zugeleitet. Durch die Verwendung des Halbtrocken-REA-Produkts stieg jedoch der Gehalt an Gesamtstickstoff im

REA-Abwasser von 200 bis 400 mg/l auf 400 bis 800 mg/l, darin etwa 300 mg/l Stickstoff in Form von biologisch schwer abbaubaren S-N-Verbindungen. Um neuen Abgabevorschriften zu genuegen, wurde eine weitere Reinigungsstufe erforderlich: es wurde eine Versuchsanlage installiert und betrieben, in der aus einem Fluessigsauerstoff-Tank ein Ozongenerator gespeist wurde, der 1,2 kg/h Ozon erzeugte, das an einer Injektor-Kehle in einen Abwasser-Kreislauf von 15 m³/h eingespeist wurde. Der Kreislauf war an einen 3-m³-Reaktor angeschlossen. Nach 5 h waren 66 % der S-N-Verbindungen oxidiert und damit das Abwasser abgabefähig. Neben Wasser- und Ozonstrom hatte der Druck am Injektor-Eintritt starken Einfluss auf die Oxidationsleistung. Hauptproblem waren Gipsablagerungen, sodass fuer den Kreislauf eine Schneckenpumpe eingesetzt und etwa dreiwöchentlich gereinigt werden musste. Inzwischen ist eine Versuchsanlage fuer 10 m³/h mit 1 kg/m³ O₃ in Betrieb gegangen.

ABSTRACTOR: Boerger, Goetz-Gerald (formerly Bayer)

NO. OF PAGES: 5

NO. IN PRINT: 0512/552

NO. OF FIGURES: 12

NO. OF TABLES: 1

NO. OF SOURCES: 3

DESCRIPTORS: oxidation ; ***spray*** dryer ; limestone scrubber ; ***wastewater*** ***treatment*** ; denitrogenation ; exhaust gas treatment ; scale-up ; oxydesulfurization ; desulphurisation ; ozonation ; sulfur removal ; nitroxidation

DESCRIPTORS: Rauchgasentschwefelung ; Spruehtrocknung ; Nassgasreinigen ; Gips ; Stickstoffverbindung ; Oxidation ; Ozon ; Abwasserbelastung

23/7,DE/16 (Item 2 from file: 315)

DIALOG(R)File 315:ChemEng & Biotec Abs

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217990 CEABA Accession No.: 19-10-010808 DOCUMENT TYPE: Journal

Title: Wastewater combustion in laboratory swirl burners. I. Arrangements and burning conditions.

AUTHOR: Zell, U.; Shamekhi, R.; Roth, P.

CORPORATE SOURCE: Univ. Duisburg Fachgebiet Verbrennung Gasdynamik 4100 Duisburg W. Germany

JOURNAL: Chem. Eng. Sci., Volume: 43, Issue: 7, Page(s): 1647-1655

CODEN: CESCAC ISSN: 00092509

PUBLICATION DATE: Jul 1988 (880700) LANGUAGE: English

ABSTRACT: Laboratory studies were made of wastewater combustion with dissolved nitrogen and sulphur compounds sprayed into a confined swirl ***flame***. The aims were to measure the nitric oxide formation under

various operating conditions and to study the interaction of nitric oxide and sulphur dioxide formation in ***flames*** with water injection. Two types of burners, which mainly differ in the method of ***wastewater*** injection, were used. The ***spray*** characteristics of the nozzles and the droplet evaporation process were measured. The temperature and the axial flow velocity distribution together with carbon monoxide and unburned hydrocarbon concentration measurement characterizes the global flow and combustion process. Thermal nitric oxide concentrations measured in the two types of burners under pure water injection conditions serve as a reference level for the subsequent nitrogen-doped water results.

DESCRIPTORS: English; ***wastewater*** ***treatment***; combustion

23/7,DE/17 (Item 3 from file: 315)
DIALOG(R)File 315:ChemEng & Biotec Abs
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120119 CEABA Accession No.: 14-08-006080 DOCUMENT TYPE: Journal
Title: Wastewater combustion in a confined swirl ***flame***.
AUTHOR: Roth, P.; Shamekhi, R.
CORPORATE SOURCE: Univ. Duisburg Fachgebiet Stromungstechnik Duisburg W. Ger.

JOURNAL: Chem. Eng. Sci., Volume: 38, Issue: 7, Page(s): 1101-6
CODEN: CESCAC

PUBLICATION DATE: 1983 (830000) LANGUAGE: English

ABSTRACT: Water with dissolved nitrogen compounds, e.g. ammonia, aminoethanol, and caprolactam, was sprayed into a confined swirl ***flame*** operating under various conditions. The ***wastewater*** and the ***atomizing*** fluid influence the visible ***flame*** structure. Droplet evaporation takes place in the recirculation zone of the flow. Measurement of the nitrogen oxide concentrations allow evaluation of the conversion efficiency of the water dissolved nitrogen compounds under the present conditions. Fenimore's universal curve of fuel-nitrogen conversion in premixed ideal ***flames*** is applicable to nitrogen oxide formation in this very complex combustion system.

DESCRIPTORS: English; ***wastewater*** ***treatment***; pyrolysis; combustion

23/7,DE/18 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
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05858538

INCINERATOR FOR INDUSTRIAL WASTE AND BLOWING NOZZLE EMPLOYED FOR THE SAME

PUB. NO.: 10-141638 [JP 10141638 A]
PUBLISHED: May 29, 1998 (19980529)
INVENTOR(s): YAMASHITA KOICHI
TSURUYA TOSHINORI
APPLICANT(s): NIKKO KINZOKU KK [000000] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-311229 [JP 96311229]
FILED: November 08, 1996 (19961108)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 32.2
(POLLUTION CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a rotary kiln type incinerator for industrial waste, which is capable of incinerating liquid state industrial waste directly in the furnace thereof, and a nozzle for blowing, which is employed for the incinerator.

SOLUTION: In a rotary kiln type industrial waste incinerator, in which industrial waste is charged from one side of a cylindrical horizontal rotary furnace 2, kept at a high temperature by an assist burner 8, to burn the same, then, residue after incineration is discharged out of the other side of the same furnace, a nozzle 20 for blowing is arranged obliquely with respect to the upper surface of the rotary furnace 2 so that the injection port 22f is directed downward in order to ***spray*** ***liquid*** state industrial ***waste*** against the position of the ***flame*** of the assist nozzle 8. In this case, the nozzle 20 for blowing is constituted of an inner tube, having a substantially constant sectional area of supplying route of liquid state industrial waste, and an outer tube, arranged at the outside of the inner tube to supply compressed air and whose inner diameter is choked so as to be substantially equal to the outer diameter of the inner tube at a position of slightly free end side from the tip end of the inner tube and, thereafter, is expanded so as to increase the same.

23/7,DE/19 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
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05726449
MIXED FIRING METHOD FOR WASTE LIQUID

PUB. NO.: 10-009549 [JP 10009549 A]

PUBLISHED: January 16, 1998 (19980116)
INVENTOR(s): TATSUTA KOJI
ICHIKI KOICHI
APPLICANT(s): OSAKA GAS CO LTD [000028] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-179951 [JP 96179951]
FILED: June 19, 1996 (19960619)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 28.1 (SANITATION -- Sanitary Equipment); 32.2 (POLLUTION CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PROBLEM TO BE SOLVED: To reduce adhesion of ash to a water tube and furnace wall by a method wherein when fuel and waste liquid are ***fired*** in a mixed state by mixing steam or high pressure air into ***waste*** ***liquid*** to ***spray*** the mixture into ***flames*** of a burner, in an initial stage of mixing steam or high pressure air into the waste liquid, a dilution water is added to the waste liquid.

SOLUTION: In a boiler or an incinerator for mixed firing of ***waste*** ***liquid*** in which ***waste*** ***liquid*** is ***sprayed*** into ***flames*** of a burner 6 for firing city gas or heavy oil to effect mixed firing, the waste liquid is diluted with water and if required, surface-active agents are added to dilution water and then mixed firing is effected. The interior of the boiler or incinerator is heated to 300-350 deg.C and when the waste liquid is incinerated, a part of ash ions separated from the waste liquid in combustion exhaust gas or dried steam are recombined on the surface of a water tube 4 or furnace wall and attached thereto; however, if the amount of exhaust gas increases due to the vaporization of the dilution water, the concentration of ash ion particles in the exhaust gas is made lower so that the amount of ash adhering to the water tube etc., can be reduced.

23/7,DE/20 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO
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05688945
GAS BURNER FOR INCINERATING WASTE LIQUID

PUB. NO.: 09-303745 [JP 9303745 A]
PUBLISHED: November 28, 1997 (19971128)
INVENTOR(s): YAMADA SUSUMU

DEGUCHI MASAKAZU
INOUE TAKESHI

APPLICANT(s): TOHO GAS CO LTD [352417] (A Japanese Company or Corporation), JP (Japan)
SUNRAY REINETSU CO LTD [401193] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 08-112598 [JP 96112598]

FILED: May 07, 1996 (19960507)

JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 32.2 (POLLUTION CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PROBLEM TO BE SOLVED: To completely incinerate the waste liquid containing much water by a gas burner for incinerating the waste liquid.

SOLUTION: A gas burner is provided with means 12a, 21 to feed the fuel gas and air so as to form a ring-shaped ***flame*** 40, and a ***waste*** ***liquid*** spraying means 30 to ***spray*** the ***atomized*** ***waste*** ***liquid*** from an inner side of the ring-shaped ***flame*** 40 toward the ring-shaped ***flame*** 40, and the ***waste*** ***liquid*** ***spraying*** means 30 ***sprays*** the ***waste*** ***liquid*** by the pressure of the compressed air. A nozzle of the ***waste*** ***liquid*** ***spraying*** means 30 is located forward of an outlet 21 of the fuel gas forming the ring-shaped ***flame*** 40 by a prescribed distance.

23/7,DE/21 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO
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05152672
TREATMENT OF ***WASTE*** ***WATER*** CONTAINING OXIDE FORM NITROGEN

PUB. NO.: 08-108172 [JP 8108172 A]
PUBLISHED: April 30, 1996 (19960430)
INVENTOR(s): SHIGETA TADAO
 ISHIKAWA ATSUNORI

APPLICANT(s): NITTETSU KAKOKI KK [359571] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 06-284586 [JP 94284586]
FILED: October 13, 1994 (19941013)

JAPIO CLASS: 13.1 (INORGANIC CHEMISTRY -- Processing Operations)

ABSTRACT

PURPOSE: To perfectly decompose and detoxify waste water containing oxide form nitrogen in high concentration by ***spraying*** ***waste*** ***water*** containing oxide form nitrogen into an incinerator to incinerate the same at predetermined temperature in the presence of a denitrating agent.

CONSTITUTION: ***Waste*** ***water*** containing oxide form nitrogen is ***sprayed*** toward the high temperature ***flame*** in an incinerator main body 1 from a ***waste*** ***water*** ***spray*** nozzle 6 through piping 5. At this time, the incineration temperature in the main body 1 is set to 850 deg.C or higher. However, the incineration temperature is preferably 1100 deg.C or lower, more preferably 1000 deg.C or lower from a viewpoint such that the generation of NOx becomes much as temperature becomes high and from the aspect of the conservation of fuel and the material quality of the incinerator main body. By this constitution, water is rapidly evaporated from waste water and nitrogen oxide is decomposed. In the case of the coexistence of organic matter, the incineration of the organic matter is performed. At the time of incineration, a denitrating agent such as ammonia is supplied to be ejected into the incinerator main body along with ***waste*** ***water*** from the ***waste*** ***water*** ***spray*** nozzle 6.

23/7,DE/22 (Item 5 from file: 347)
DIALOG(R)File 347:JAPIO
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04853320

LOW-CONCENTRATION OILY WASTE WATER INCINERATING METHOD

PUB. NO.: 07-145920 [JP 7145920 A]
PUBLISHED: June 06, 1995 (19950606)
INVENTOR(s): YOKOYAMA TATSUMI
 OKOCHI TOSHIHIRO
 TAMADA YASUJI
APPLICANT(s): NIPPON STEEL CORP [000665] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 05-315763 [JP 93315763]
FILED: November 24, 1993 (19931124)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 28.1 (SANITATION -- Sanitary Equipment); 32.2 (POLLUTION CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PURPOSE: To incinerate waste water containing oil at a low concentration at high efficiency with a little stabilizing fuel in a rotary kiln-type incinerator.

CONSTITUTION: When waste water containing oil of a low concentration of 1 to 10% is incinerated by a rotary kiln-type incinerator, the oily ***waste*** ***water*** is ***sprayed*** in the form of coarse particles having a diameter of 0.2 to 2.0mm, and ***flames*** of a stabilizing burner for the oily waste water are brought into contact with the kiln inner wall, and the waste water is incinerated by being dropped on the wall surface locally kept at high temperatures. Thereby, decrease of stabilizing fuel is made possible by keeping only the limited narrow range at high temperatures by the wall surface combustion, moreover the miniaturization of the facility is made possible.

23/7,DE/23 (Item 6 from file: 347)
DIALOG(R)File 347:JAPIO
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03074514

CONSTANT STABILIZING TYPE INCINERATOR WHICH CAN INCINERATE LIQUID WASTE SIMULTANEOUSLY

PUB. NO.: 02-050014 [JP 2050014 A]
PUBLISHED: February 20, 1990 (19900220)
INVENTOR(s): NAGAEI MADOKA
SHIRAISHI HIDEAKI
APPLICANT(s): SUMITOMO HEAVY IND LTD [000210] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 63-198985 [JP 88198985]
FILED: August 11, 1988 (19880811)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 23.1 (ATOMIC POWER -- General); 32.4 (POLLUTION CONTROL -- Refuse Disposal); 32.5 (POLLUTION CONTROL -- Radioactive Waste ***Treatment***)

ABSTRACT

PURPOSE: To make it possible to carry out simultaneous incineration processing about liquid and solid wastes in a compact-sized incinerator by installing both a stabilizing burner and a spray nozzle for liquid wastes to the upper part of a ***fire*** resisting combustion furnace, and mixing the air from a combustion air supply port installed to the shell of said furnace with the gas from a stabilizing burner within a cyclone current.

CONSTITUTION: A furnace chamber is divided into a front stage combustion area, which comprises an upper part combustion area 'a' and an intermediate part area 'b', and a rear stage combustion area 'd' with a partition plate 9 fixedly installed to the top of a furnace so that a ***fire*** resisting combustion furnace 1 may be divided into two sections. The lower part of the partition plate 9 is separated from the bottom of the furnace so that a gas passage inside the furnace may be U-shaped. A liquid damping spray nozzle 10 is installed in parallel with a stabilizing burner 5 provided on the top of the furnace. ***Liquid*** ***waste*** is ***atomized*** into fine particles, which are charged then. The liquid drops atomized from the spray nozzle 10 are immediately heated up to a higher temperature and dried up in the upper part combustion area 'a' by the stabilizing burner 5 and a cyclone current 8 formed by a hot air from a combustion air nozzle 6 so that the evaporation of humidity and the combustion of inflammable substances may be carried out to a perfect extent. This construction does not affect adversely the combustion characteristics in a furnace bottom combustion area c and the rear stage combustion area d, which contributes the combustion of solid waste.

23/7,DE/24 (Item 7 from file: 347)
DIALOG(R)File 347:JAPIO
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03058012
WASTE LIQUID PROCESSING METHOD AND ***WASTE*** ***LIQUID*** PROCESSING ***ATOMIZER*** NOZZLE

PUB. NO.: 02-033512 [JP 2033512 A]
PUBLISHED: February 02, 1990 (19900202)
INVENTOR(s): KAWANAMI ISAO
APPLICANT(s): ASAHI ORGANIC CHEM IND CO LTD [358423] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 63-180335 [JP 88180335]
FILED: July 21, 1988 (19880721)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 32.2 (POLLUTION CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PURPOSE: To improve combustion efficiency by mixing both inflammable substance-containing waste liquid and air in a combustion chamber of a boiler, and injecting the mixture dispersively at the tip of burner ***flames*** in the combustion chamber, striking against a collision plate.

CONSTITUTION: A nozzle 6 is designed based on a double pipe structure which

comprise an inner pipe 7 located in the center of a main body 60 where air flows and an outer pipe 8 where waste liquid flows over the outer periphery. A jet nozzle 9 is installed to the tip of the main body 60. A collision plate 10 is further installed in front of the nozzle so that they may face each other. An attempt is made to properly select the position of the nozzle 6 to be inserted into a combustion chamber 4 of a boiler 1 so that the ***waste*** ***liquid*** ***atomized*** by the nozzle 6 may be uniformly injected to the tip of a heavy oil burner 2 subject to the highest temperature of the ***flames***. It is most advantageous that the nozzle should be installed in the axial direction of the burner 2 on a slant from the upper part of the combustion chamber. The aforesaid construction eliminates the generation of soot due to imperfect combustion, the adherence of waste liquid on the wall of the combustion chamber, the residue on the bottom, and hence prevents the damage of the boiler's burner.

23/7,DE/25 (Item 8 from file: 347)
DIALOG(R)File 347:JAPIO
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02258610
INCINERATOR OF WASTE WATER CONTAINING OIL

PUB. NO.: 62-175510 [JP 62175510 A]
PUBLISHED: August 01, 1987 (19870801)
INVENTOR(s): TAMURA HIDEAKI
MASAOKA TOKUTATSU
TAKASUGI SHIRO
APPLICANT(s): THREE BOND CO LTD [400889] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 61-016168 [JP 8616168]
FILED: January 27, 1986 (19860127)
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 32.2 (POLLUTION CONTROL -- Waste Water ***Treatment***); 32.4 (POLLUTION CONTROL -- Refuse Disposal)

ABSTRACT

PURPOSE: To prevent the temperature of a primary combustion chamber from being decreased and make an entire small-sized incinerator by a method wherein a waste water discharging nozzle of the primary combustion chamber is arranged below a ***flame*** of a primary burner.

CONSTITUTION: ***Waste*** ***water*** is injector or ***atomized*** from an injection nozzle 4 of a primary combustion chamber 1 to below a ***flame***

of a primary burner 3, water content is evaporated, oil content is changed into combustion gas and they pass through a communication discharging hole 6 and are guided into a secondary combustion chamber 2. In the secondary combustion chamber 2, if an incomplete combustion is discharged within the discharged gas from the primary combustion chamber 1, it may be completely ignited with the ***flame*** of the secondary burner 8. Since no evaporation of water is found in the secondary combustion chamber 2, even if a heating calorie of the secondary burner 8 is low, the temperature of the furnace does not decrease. Since the size of the combustion chamber can be made small according to this arrangement, it is possible to miniaturize the secondary combustion chamber by about 20-40% of that of the primary combustion chamber.

23/7,DE/26 (Item 9 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2006 JPO & JAPIO. All rts. reserv.

00649479

WASTE ***LIQUID*** ***TREATING*** METHOD AND APPARATUS

PUB. NO.: 55-137079 [JP 55137079 A]
PUBLISHED: October 25, 1980 (19801025)
INVENTOR(s): TAN SEIICHI
APPLICANT(s): TAN SEIICHI [000000] (An Individual), JP (Japan)
APPL. NO.: 54-044042 [JP 7944042]
FILED: April 10, 1979 (19790410)
JAPIO CLASS: 13.1 (INORGANIC CHEMISTRY -- Processing Operations); 24.2
(CHEMICAL ENGINEERING -- Heating & Cooling); 32.2 (POLLUTION
CONTROL -- ***Waste*** ***Water*** ***Treatment***); 32.4
(POLLUTION CONTROL -- Refuse Disposal

ABSTRACT

PURPOSE: To enhance the concentrating efficiency to a large extent by a method wherein, in case of utilizing high humidity exhaust gas from an incinerating furnace as a heat source of an evaporating vessel for concentrating waste liquid, the condensed water is sprinkled into the said exhaust gas or/and introduced into an evaporating vessel after spraying and evaporating and the heat exchange within an evaporating vessel is approached to a liquid-liquid system.

CONSTITUTION: The high humidity exhaust gas generated by ***spraying*** a concentrated ***waste*** ***liquid*** into ***fire*** ***flame*** by an atomizer nozzle 3 or the high humidity exhaust gas from other incinerating furnace 1 is treated by condensed water or fresh water injected from a

spraying machine 12 in a mixing instrument or/and a wet scrubber 11 and the high humidity exhaust gas in a sufficiently lowered temperature condition is obtained. This gas is flowed into a space between water pipes 23 within an evaporating vessel 17 and condensed on a surface of a water pipe to impart the condensation heat to waste liquid downwardly flowed within a water pipe. Thereby, the total heat conducting coefficient of the heat exchange within an evaporating vessel 17 is increased to above 10 times compared to a liquid-gas system.

23/7,DE/27 (Item 10 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2006 JPO & JAPIO. All rts. reserv.

00534759

TREATMENT OF ***WASTE*** ***WATER*** CONTAINING AMMONIUM SALTS,
SULFURIC ACID RADICAL, AND ORGANIC COMPOUNDS

PUB. NO.: 55-022359 [JP 55022359 A]
PUBLISHED: February 18, 1980 (19800218)
INVENTOR(s): TSURUTA HIDEKAZU
SUZAWA YOSHIKAZU
KINOSHITA YOSHIAKI
APPLICANT(s): NITTETSU KAKOKI KK [359571] (A Japanese Company or
Corporation), JP (Japan)
APPL. NO.: 53-095846 [JP 7895846]
FILED: August 08, 1978 (19780808)
JAPIO CLASS: 28.1 (SANITATION -- Sanitary Equipment); 13.1 (INORGANIC
CHEMISTRY -- Processing Operations); 24.2 (CHEMICAL
ENGINEERING -- Heating & Cooling); 32.1 (POLLUTION CONTROL --
Exhaust Disposal); 32.2 (POLLUTION CONTROL -- ***Waste***
Water ***Treatment***); 32.4 (POLLUTION CONTROL --
Refuse Disposal
JAPIO KEYWORD: R018 (FLUIDIZED BEDS)

ABSTRACT

PURPOSE: To ***treat*** ***waste*** ***water*** containing ammonia radical ($\text{NH}_{\text{sub}} 4$), sulfuric acid radical ($\text{SO}_{\text{sub}} 4$), and organic compounds by incineration harmlessly and economically.

CONSTITUTION: When ***treating*** the ***waste*** ***water*** 1 generated in the manufacture of acrylonitrile, for example, the waste water 1 is first sent to the mixing tank 3 with the slaked lime 2 where partially liberated $\text{NH}_{\text{sub}} 3$ is removed through the bent tube 20 and also slurry containing $\text{CaSO}_{\text{sub}} 4$ and excess lime is sent to the hot air contact type evaporator 5 by the pump 4. Into the evaporator 5, combustion gas formed in

the rotary furnace 11 is blown from the duct 19 to heat liquid for moisture evaporation. The liberated NH₃(sub 3) is exhausted from the end part of the evaporator and concentrated ***waste*** ***water*** is dissipated from the liquid ***diffusing*** tube 12 through the outlet hood 9 into the rotary furnace 11 by the pump 10 and then incinerated by ***flame*** from the burner 17. And, ash is taken out through outlet hood 16.

23/7,DE/28 (Item 11 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2006 JPO & JAPIO. All rts. reserv.

00473862

TREATING METHOD OF GARBAGE RECLAIMED LAND EXUDING WASTE WATER

PUB. NO.: 54-125862 [JP 54125862 A]
PUBLISHED: September 29, 1979 (19790929)
INVENTOR(s): HORII YASUO
TSUDA NOBUO
APPLICANT(s): KUBOTA LTD [000105] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 53-030450 [JP 7830450]
FILED: March 13, 1978 (19780313)
JAPIO CLASS: 28.1 (SANITATION -- Sanitary Equipment); 13.1 (INORGANIC
CHEMISTRY -- Processing Operations); 32.2 (POLLUTION CONTROL
-- ***Waste*** ***Water*** ***Treatment***)

ABSTRACT

PURPOSE: To optimally ***treat*** ***waste*** ***water*** continually even if waste water more than the quantity of water planned flows in, by reflux ***spraying*** ***waste*** ***water*** to reclaimed lands as it remains as it is raw water before treatment.

CONSTITUTION: Waste water exuded from garbage reclaimed lands is organisms treated at a catalytic oxidation tank 6, and treated by caustic soda, ferric chloride, etc. at a rapid agitator 7 and by high molecular coagulant at a low agitator 8. When the quantity of exuded waste water flowing in exceeds the capacity of an adjusting tank 5, waste water in the adjusting tank 5 is returned to a reclaimed land 14 as it is while water treated in a treating water tank 13 can be returned to the reclaimed land in order to adjust the temperature and to prevent the diffusion of the offensive odors of the reclaimed land 14. When the quantity of waste water exuded is extremely little, the whole quantity of water treated from the treating water tank 13 are returned to the reclaimed land 14, the temperature of the reclaimed land is adjusted and the occurrence of a ***fire***, etc. due to abnormal drying can be prevented.

23/7,DE/29 (Item 1 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)
(c) 2006 American Chemical Society. All rts. reserv.

134226775 CA: 134(16)226775d PATENT
Combustion treatment of wastewater containing high concentration dioxin
INVENTOR(AUTHOR): Otsuji, Hiroyuki; Aoki, Hisanao; Nonoyama, Noboru
LOCATION: Japan,
ASSIGNEE: Asahi Engineering Co., Ltd.
PATENT: Japan Kokai Tokkyo Koho ; JP 200174224 A2 DATE: 20010323
APPLICATION: JP 99252381 (19990907)
PAGES: 4 pp. CODEN: JKXXAF LANGUAGE: Japanese
PATENT CLASSIFICATIONS:
CLASS: F23G-007/04A; F23G-007/04B
SECTION:
CA260002 Waste Treatment and Disposal
CA243XXX Cellulose, Lignin, Paper, and Other Wood Products
IDENTIFIERS: dioxin contg wastewater treatment combustion, atomization
combustion dioxin decompn wastewater treatment, pulp manufg wastewater
atomization combustion, landfill leachate dioxin atomization combustion
DESCRIPTORS:
Atomizing(spraying)... Landfill leachate...
flame combustion of atomized high concn. dioxin-contg. wastewater
Wastewater...
industrial, papermaking; flame combustion of atomized high concn.
dioxin-contg. wastewater
Combustion...
spray; flame combustion of atomized high concn. dioxin-contg.
wastewater
Paper...
wastewater from manuf. of; flame combustion of atomized high concn.
dioxin-contg. wastewater
CAS REGISTRY NUMBERS:
262-12-4D chloro derivs., flame combustion of atomized high concn.
dioxin-contg. wastewater

23/7,DE/30 (Item 2 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)
(c) 2006 American Chemical Society. All rts. reserv.

134136107 CA: 134(10)136107h PATENT
Method and assembly for converting waste water accumulated in a fossil

fuel-fired power generation system
INVENTOR(AUTHOR) : Czarnecki, Thomas S.; Friedrichs, Gustave E.;
Grabowski, Douglas F.; Tanca, Michael C.
LOCATION: USA
ASSIGNEE: Abb Alstom Power Inc.
PATENT: PCT International ; WO 200109550 A1 DATE: 20010208
APPLICATION: WO 2000US17990 (20000629) *US 364160 (19990730)
PAGES: 24 pp. CODEN: PIXXD2 LANGUAGE: English
PATENT CLASSIFICATIONS:
CLASS: F23J-015/00A; F23G-007/00B; F23L-015/02B
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ;
CA; CH; CN; CR; CZ; DE; DK; DM; DZ; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU;
ID; IL; IN; IS; JP; KE; KG; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG;
MK; MN; MW; MX; MZ; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM;
TR; TT; TZ; UA; UG; UZ; VN; YU; ZA; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZW; AT;
BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ;
CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA260003 Waste Treatment and Disposal
CA259XXX Air Pollution and Industrial Hygiene
IDENTIFIERS: wastewater evapn flue gas desulfurization spray dryer
reactor
DESCRIPTORS:
Wastewater treatment...
evapn.; method and assembly for converting wastewater accumulated in
fossil fuel-fired power generation system
Flue gas desulfurization...
method and assembly for converting wastewater accumulated in fossil
fuel-fired power generation system
Flue gases...
power-plant flue gases; method and assembly for converting wastewater
accumulated in fossil fuel-fired power generation system
Drying apparatus... Spraying apparatus...
spray drying app.; method and assembly for converting wastewater
accumulated in fossil fuel-fired power generation system
CAS REGISTRY NUMBERS:
12624-32-7 method and assembly for converting wastewater accumulated in
fossil fuel-fired power generation system

23/7,DE/31 (Item 3 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)
(c) 2006 American Chemical Society. All rts. reserv.

130269488 CA: 130(20)269488x JOURNAL
Burn liquid wastes efficiently
AUTHOR(S): Kuten, P.; Pollard, J.; Angulo, E.; Drennan, S.; White, H.
LOCATION: Fluor Daniel, Inc., Houston, TX, USA
JOURNAL: Hydrocarbon Process., Int. Ed. DATE: 1999 VOLUME: 78 NUMBER:
1 PAGES: 101-104 CODEN: IHPRBS ISSN: 0018-8190 LANGUAGE: English
PUBLISHER: Gulf Publishing Co.
SECTION:
 CA251012 Fossil Fuels, Derivatives, and Related Products
 CA260XXX Waste Treatment and Disposal
IDENTIFIERS: olefin byproduct incinerate fired boiler, atomization
 dispersion burner olefin waste byproduct, pyrolysis fuel oil
 incineration
DESCRIPTORS:
Atomizing(spraying)... Spray atomizers...
 burn liq. olefin unit wastes efficiently
Burners... Furnace firing...
 burn liq. wastes efficiently
Petroleum cracking residues...
 pyrolysis; burn liq. olefin unit wastes efficiently
Synthetic fuels...
 pyrolytic fuel oil; burn liq. olefin unit wastes efficiently
Petroleum pyrolysis...
 sludges; burn liq. olefin unit wastes efficiently
Fuel oil...
 synthetic pyrolytic fuel oil; burn liq. olefin unit wastes efficiently

23/7,DE/32 (Item 4 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)
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112124414 CA: 112(14)124414p PATENT
Apparatus for treatment of boiler flue gas and the resulting wastewater
INVENTOR(AUTHOR): Yoneda, Kenichi; Hayashi, Isao
LOCATION: Japan,
ASSIGNEE: Mitsubishi Heavy Industries, Ltd.
PATENT: Japan Kokai Tokkyo Koho ; JP 8994923 A2 ; JP 0194923 DATE:
890413
APPLICATION: JP 87250643 (871006)
PAGES: 5 pp. CODEN: JKXXAF LANGUAGE: Japanese
PATENT CLASSIFICATIONS:
 CLASS: B01D-053/34A
SECTION:
 CA259004 Air Pollution and Industrial Hygiene

CA260XXX Waste Treatment and Disposal
IDENTIFIERS: boiler flue gas desulfurization wastewater, dry spraying
wastewater filtration pptn
DESCRIPTORS:
Flue gases...
from coal-fired boilers, wet desulfurization of, spent solns. from,
treatment of, app. for
Wastewater treatment, drying, spray...
of boiler fuel gas desulfurization tower effluents, undried solid
deposit plugging prevention in
CAS REGISTRY NUMBERS:
13397-24-5P preparation, formation of, from wet desulfurization of
coal-fired boiler flue gases
12624-32-7 removal of, from boiler fuel gases, by wet scrubbing,
wastewater from, treatment of, app. for

23/7, DE/33 (Item 5 from file: 399)
DIALOG(R) File 399:CA SEARCH(R)
(c) 2006 American Chemical Society. All rts. reserv.

112011510 CA: 112(2)11510y PATENT
Fine bubble aeration elements
INVENTOR(AUTHOR): Bodas, Sandor; Gonda, Gyula; Ignacz, Jakab Maria;
Karacs, Gabor; Miko, Zoltan; Nagy, Lajos; Papp, Imre
LOCATION: Hung.
ASSIGNEE: "Granit" Csiszoloszerszam es Koedenygyarto Vallalat, Budapest;
Vizgepeszeti Vallalat
PATENT: Hungary Teljes ; HU 48862 A2 DATE: 890728
APPLICATION: HU 875360 (871130)
PAGES: 11 pp. CODEN: HUXXBU LANGUAGE: Hungarian
PATENT CLASSIFICATIONS:
CLASS: C04B-038/00A; C08J-009/24B
SECTION:
CA260003 Waste Treatment and Disposal
IDENTIFIERS: diffusor corundum wastewater aeration
DESCRIPTORS:
Wastewater treatment, activated-sludge process...
aeration in, fire-bubble porous plate diffusor for
Wastewater treatment, aeration...
fire-bubble porous plate diffusor for
Distributing apparatus...
gas, fine-bubble porous plate diffusor as

23/7,DE/34 (Item 6 from file: 399)
DIALOG(R) File 399:CA SEARCH(R)
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108118288 CA: 108(14)118288b JOURNAL
Intraparticle diffusion process occurring during adsorption of dyes
AUTHOR(S): McKay, Gordon; Otterburn, Michael S.; Aga, Jamal A.
LOCATION: Dep. Chem. Eng., Queen's Univ. Belfast, Belfast, UK, BT9 5DL
JOURNAL: Water, Air, Soil Pollut. DATE: 1987 VOLUME: 36 NUMBER: 3-4
PAGES: 381-90 CODEN: WAPLAC ISSN: 0049-6979 LANGUAGE: English
SECTION:
 CA260003 Waste Treatment and Disposal
 CA241XXX Dyes, Organic Pigments, Fluorescent Brighteners, and
Photographic Sensitizers
IDENTIFIERS: dye adsorption wastewater fuller earth, clay adsorption
 Astrazone Blue wastewater, Telon Blue adsorption wastewater, Acid Blue
 25 adsorption wastewater
DESCRIPTORS:
Fuller's earth...
 adsorbents, Telon Blue adsorption from wastewater by, intraparticle
 diffusion in
Wastewater treatment, adsorption...
 Astrazone Blue and Telon Blue removal in, by fired clay and Fuller's
 earth, intraparticle diffusion in relation to
Ceramic materials and wares...
 fired-clay, Astrazone Blue adsorption from wastewater by, intraparticle
 diffusion in
Diffusion...
 intraparticle, in Astrazone Blue and Telon Blue adsorption from
 wastewater by Fuller's earth and fired clay
Process simulation, physicochemical...
 of intraparticle diffusion in dye adsorption, wastewater treatment in
 relation to
CAS REGISTRY NUMBERS:
74244-81-8 84933-15-3 removal of, from wastewater, by adsorption,
 intraparticle diffusion in

23/7,DE/35 (Item 7 from file: 399)
DIALOG(R) File 399:CA SEARCH(R)
(c) 2006 American Chemical Society. All rts. reserv.

88196659 CA: 88(26)196659f TECHNICAL REPORT
Portsmouth Gaseous Diffusion Plant environmental monitoring report for
calendar year 1976

AUTHOR(S): Martin, W. E.; Anderson, R. E.; Rumble, B. J.
LOCATION: Goodyear At. Corp., Piketon, Ohio
JOURNAL: Report DATE: 1977 NUMBER: GAT-914 PAGES: 47 pp. CODEN:
D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1978, 3(2), Abstr.
No. 5106 AVAIL: NTIS

SECTION:

CA059002 Air Pollution and Industrial Hygiene

CA060XXX Sewage and Wastes

CA061XXX Water

CA071XXX Nuclear Technology

IDENTIFIERS: environment pollution monitoring Portsmouth Ohio

DESCRIPTORS:

Fluorides, biological studies...

air pollution by, in Portsmouth, Ohio, gaseous diffusion plant in relation to

Precipitation, electric...

app. for, for coal-fired steam plant

Air pollution... Soil pollution... Water pollution...

gaseous diffusion plant in relation to, in Portsmouth, Ohio

Health physics...

of environmental radioactivity, in Portsmouth, Ohio

Wastewater treatment...

of gaseous diffusion plant effluents, in Portsmouth

Radioactivity...

pollution by, in Portsmouth, Ohio

Environment...

pollution of, in Portsmouth, Ohio, gaseous diffusion plant in relation to

? t s23/34/36-38

23/34/36 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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016980299 **Image available**

WPI Acc No: 2005-304612/200531

Liquid ***waste*** ***treatment*** apparatus for use in industrial application, has nozzle ***atomizing*** ***liquid*** ***waste*** and ***spraying*** it into ***flame***, where energy from ***flame*** causes organic portion of waste to gasify and dissociate into components

Patent Assignee: CAPOTE J A (CAPO-I); MENON F K (MENO-I); ROSIN J A (ROSI-I); PEAT INT INC (PEAT-N)

*The present
Application*

Inventor: CAPOTE J A; MENON F K; ROSIN J A
 Number of Countries: 108 Number of Patents: 002
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20050070751	A1	20050331	US 2003673078	A	20030927	200531 B
WO 200533583	A1	20050414	WO 2004US31310	A	20040924	200531

Priority Applications (No Type Date): US 2003673078 A 20030927

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20050070751	A1	10	A62D-003/00
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WO 200533583	A1 E		F23G-005/027
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20050070751 A1

NOVELTY - The apparatus has an AC plasma torch with a vessel (107). A pair of nozzles (102, 104) is located in the vessel so that liquid waste introduced through the nozzle into the vessel will be sprayed into or above a ***flame*** emitted by the torch. The nozzle atomizes the waste and sprays it into a ***flame***. The energy from the ***flame*** causes an organic portion of the ***atomized*** ***liquid*** ***waste*** to gasify and dissociate into number of components.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for ***treating*** ***liquid*** ***waste***.

USE - Used in an industrial application.

ADVANTAGE - The energy from the ***flame*** causes the organic portion of the ***atomized*** ***liquid*** ***waste*** to gasify and dissociate into number of components, thus completely destroying any hazardous or toxic constituency of the waste material.

DESCRIPTION OF DRAWING(S) - The drawing shows a partially schematic view of a waste ***treatment*** apparatus.

Nozzles (102, 104)

Vessel (107)

Ejector-venturi scrubber (110)

Valley (118)

Steam valve (135)

pp; 10 DwgNo 1/2

Derwent Class: P35; Q73; X25

International Patent Class (Main): A62D-003/00; F23G-005/027

International Patent Class (Additional): F23G-005/08; F23G-007/00;
F23J-015/04; F23J-015/06

23/34/37 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013165577

WPI Acc No: 2000-337450/200029

Method for cleaning liquid wastes from ions of heavy metals and their radioactive isotopes

Patent Assignee: WATER PURIFICN TECHN LAB NAUKA CO LTD (WATE-R)

Inventor: CHUGUNOV A S; NECHAEV A F; SHIBKOV S N

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
RU 2127459	C1	19990310	RU 97121532	A	19971225	200029 B

Priority Applications (No Type Date): RU 97121532 A 19971225

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
RU 2127459	C1		G21F-009/06	

Abstract (Basic): RU 2127459 C1

NOVELTY - Method involves electrochemical ***treatment*** of ***liquid*** ***wastes*** by oxidizing complex compounds of heavy metals and radioactive isotopes contained in them by means of electrodes using nonconsumable electrode as anode and gas-diffusion one, as cathode, this procedure being followed by joint sedimentation of ions of heavy metals and their radioactive isotopes with collectors, separation of slurry phase, and production of clean solution. Collectors are produced by electrochemical treatment of solution obtained due to oxidation of wastes using consumable anode and gas-diffusion cathode. Electrochemical treatment is effected at anode current density of at least 0.1 A/sq.dm and at oxygen partial pressure across gas-***diffusion*** cathode not lower than 0.2. ***Liquid*** ***wastes*** having salt content of 5 to 500 g/cu.dm can be effectively cleaned of heavy metals and their radioactive isotopes in the environment of organic and inorganic complexing agents.

USE - Decontamination and recovery of liquid wastes containing toxic and radioactive pollutants to prevent their emission into surrounding atmosphere.

ADVANTAGE - Improved degree of decontamination; provision for eliminating unwanted electrochemical reactions causing emission of explosive and ***fire***-hazard electrolytic gases and nonproductive power consumption. 3 cl, 4 tbl, 3 ex

pp; 0 DwgNo 0/0

Derwent Class: K07; X25

International Patent Class (Main): G21F-009/06

23/34/38 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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001275070

WPI Acc No: 1975-F8978W/197523

Cyclone reactor for ***waste*** ***water*** ***flame*** ***treatment*** - has water sprayers and combustion air and fuel gas inlets
Patent Assignee: CHEM IND POWER TECH (CHIN-R); MOSCOW POWER INST (MOPO-R); SCHEKINSK CHEM COMPLEX (SCHE-R); SHCHEKINO CHEM WKS (SHCH-R)

Number of Countries: 010 Number of Patents: 012

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DD 111726	A	19750305				197523 B
US 3885906	A	19750527				197523
DE 2425850	A	19751218				197602
NL 7408950	A	19760106				197604
SE 7407416	A	19760112				197606
FI 7401650	A	19760202				197610
FR 2272955	A	19760130				197612
GB 1438221	A	19760603				197623
CA 1012006	A	19770614				197726
NL 160930	B	19790716				197931
DE 2425850	B	19790830				197936
RO 65510	A	19790920				198101

Priority Applications (No Type Date): DD 178715 A 19740523

Abstract (Basic): DD 111726 A

The cyclone reactor is used for ***flame*** treatment of industrial waste waters which contain high concentrations of organic or inorganic and mineral matter, for example in the chemical and petrochemical, cellulose and paper industry in order to protect the environment against pollution. The cyclone reactor is especially suitable for ***flame*** ***treatment*** of ***waste*** ***water*** containing toxic waste at high concentrations whose disposal by high dilution is

impractical. The reactor has cylindrical chamber (1) with tangential burners (2) in the upper part with primary air and fuel gas supply connections. ***Waste*** ***water*** ***spray*** nozzles (7) are arranged below the burners. Molten mineral matter is drawn out through the opening (6) at the base of the draught chamber (5) below the reactor chamber.

Derwent Class: Q73

International Patent Class (Additional): A23K-000/00; C02C-005/00;
F23C-005/18; F23G-005/00; F23G-007/04

?